

## DT progression Document

### DT Intent

Design and Technology at Hurst Hill prepares children to take part in a rapidly changing world. The subject encourages children to become autonomous and creative problem solvers both as individuals and as part of a team. It enables them to identify needs and opportunities and to respond to developing ideas and making products and systems. They will reflect and evaluate their work considering the aesthetic, social and environmental issues. Design Technology will help children at Hurst Hill become discriminating and informed consumers.



### EYFS-ELG

Expressive Arts and Design ELG: Creating with Materials Children at the expected level of development will: - Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function; - Share their creations, explaining the process they have used.

Understanding the World – Technology Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes. Expressive arts and design: Exploring and using media and materials They safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. Expressive arts and design: Being imaginative Children use what they have learnt about media and materials in original ways, thinking about uses and purposes. They represent their own ideas, thoughts and feelings through design and technology, art, music, dance, role play and stories.

### Key stage 1

Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home and school, gardens and playgrounds, the local community, industry and the wider environment].

When designing and making, pupils should be taught to:

#### Design

- design purposeful, functional, appealing products for themselves and other users based on design criteria
- generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology

#### Make

- select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]
- select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics

#### Evaluate

- explore and evaluate a range of existing products
- evaluate their ideas and products against design criteria

#### Technical knowledge

- build structures, exploring how they can be made stronger, stiffer and more stable
- explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.

#### Cooking and nutrition

As part of their work with food, pupils should be taught how to cook and apply the principles of nutrition and healthy eating. Instilling a love of cooking in pupils will also open a door to one of the great expressions of human creativity. Learning how to cook is a crucial life skill that enables pupils to feed themselves and others affordably and well, now and in later life.

Pupils should be taught to:

- use the basic principles of a healthy and varied diet to prepare dishes
- understand where food comes from.

### Key stage 2

Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home, school, leisure, culture, enterprise, industry and the wider environment].

When designing and making, pupils should be taught to:

#### Design

- use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups
- generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design

#### Make

- select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately

- select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities

### **Evaluate**

- investigate and analyse a range of existing products
- evaluate their ideas and products against their own design criteria and consider the views of others to improve their work
- understand how key events and individuals in design and technology have helped shape the world

### **Technical knowledge**

- apply their understanding of how to strengthen, stiffen and reinforce more complex structures
- understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]
- understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]
- apply their understanding of computing to program, monitor and control their products.

### **Cooking and nutrition**

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Pupils should be taught to:

- understand and apply the principles of a healthy and varied diet
- prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques
- understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Designing	Expressive arts and design: Exploring and using media and materials DM 30-50 months Uses various construction materials. Beginning to construct, stacking blocks vertically and horizontally, making enclosures and creating spaces. Joins construction pieces together to build and balance. Realises tools can be used for a purpose. DM 40-60 months Constructs with a purpose in mind, using a variety of resources. Uses simple tools and techniques competently and appropriately. Selects appropriate resources and adapts work where necessary. Selects tools and techniques needed to shape, assemble and join materials they are using. ELG They safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. Expressive arts and design: Being imaginative DM 30-60 months Uses available resources to create props to support role-play. DM 40-60 months Chooses particular colours to use for a purpose. ELG Children use what they have learnt about media and materials in original ways, thinking about uses and purposes. They represent their own ideas, thoughts and feelings through design and technology and art.	To use my own ideas to make something. To explain to someone else how I want to make my product. To explain who my product is for. To choose appropriate resources and tools. To make a simple plan before making.	To design products that have a clear purpose and an intended user. To choose tools and materials and explain why I have chosen them.	To design a product with a purpose and make sure that it looks attractive. To select the most appropriate tools and techniques for a given task. To create and follow a step-by-step plan, choosing the right equipment and materials.	To use ideas from other people when I am designing. To produce a plan and explain it.	To come up with a range of ideas after collecting information from different sources. To produce a detailed, step-by-step plan. To suggest alternative plans; outlining the positive features and draw backs. To explain how a product will appeal to a specific audience.	To use market research to inform my plans and ideas. To show that I consider culture and society in my plans and designs. To justify my plans in a convincing way motivated by the service a product will offer (rather than simply for profit). To explain how products should be stored and give reasons. To work within a budget.
Materials		To measure, mark out, cut and shape a range of materials with help (tearing, cutting, folding). To cut along lines, straight and curved. To draw and cut out shapes using templates	To measure and mark out materials to the nearest centimetre to use in a model or structure. To safely demonstrate a range of cutting and shaping techniques (tearing, cutting, folding and curling). To join materials and components in different ways (gluing, hinges or combining materials to strengthen).	To work accurately to measure, make cuts and make holes.  To select appropriate joining techniques	To measure accurately. To apply appropriate cutting and shaping techniques that includes cuts within the perimeter of the material (such as slots or cut outs) To explain my choice of joining technique	To make a prototype before making a final version. To cut materials with precision and refine the finish with appropriate tools (such as sanding wood after cutting or a more precise scissor cut after cutting out the shape roughly)	To make prototypes and cross-sectional diagrams to represent designs. To follow my plans. To show an understanding of the qualities of materials to choose appropriate tools to cut and shape (such as the nature of the fabric may require sharper scissors than would be used to cut paper)
Textiles			To join fabrics/textiles by using running stitch, glue, staples, over sewing, sticky tape To decorate fabrics/textiles with buttons, beads, sequins, braids, ribbons		To choose a textile for both its suitability and appearance. I understand the need for seam allowance. To join textiles with appropriate stitching. To select the most appropriate techniques to decorate textiles.	To create objects (such as a cushion) that employs seam allowance. Join textiles with a combination of stitching techniques (e.g. back stitch for seams and running stitch to attach a decoration) Use the qualities of materials to create suitable visual and tactile effects in the decoration of textiles (e.g. soft decoration for comfort on a cushion)	
Construction		To use tools (e.g. scissors and a hole punch) safely. To make my models stronger.	To use a range of materials to practise drilling, screwing, gluing and nailing materials to make and strengthen products.	To strengthen materials using suitable techniques. To cut materials accurately and safely by selecting appropriate tools.	To choose suitable techniques to construct products. To strengthen materials using suitable techniques		To develop a range of practical skills to create products (such as cutting, drilling and screwing, nailing, gluing, filing and sanding)
Electricals and electronics						To create series and parallel circuits. To make a product which uses both electrical and mechanical components.	To create circuits using electronics kits that employ a number of components (e.g. LEDs, resistors, transistors and chips)

Mechanics		To make a product which moves. (e.g. hinges)	To create a product that moves (e.g. using levers, wheels and/or winding mechanisms)	To use scientific knowledge of forces to choose appropriate mechanisms for a product (e.g. levers, winding mechanisms, pulleys and gears)		To convert rotary motion to linear using cams. Use innovative combinations of electronics and mechanics in product designs	
	Evaluate	To describe how something works in relation to its purpose. To discuss what is good about my product. To discuss something I might change. To say what I like and do not like about items I have made and attempt to say why. To talk about my designs as they develop and identify good and bad points.	To refine the design as work progresses. To explain what went well with my work.	To prove that my design meets some set criteria.	To evaluate and suggest improvements for my designs. To evaluate products for both their purpose and appearance. To explain how I have improved my original design. To persevere and adapt my work when my original ideas do not work.	To evaluate appearance and function against original criteria. To use a range of tools and equipment competently.	To refine my plans. I show that To test and evaluate my products. To evaluate my products against clear criteria.
Cooking and nutrition		To use basic food handling, hygienic practices and personal hygiene. I am starting to understand the need for a variety of foods in a diet. To develop a food vocabulary using taste ,smell, texture and feel.	To use basic food handling, hygiene practices and personal hygiene. I am starting to understand the need for a variety of foods in a diet. To develop a food vocabulary using taste ,smell, texture and feel.	To begin to follow a recipe To assemble ingredient To describe how food ingredients come together. To measure ingredient to the nearest gram with support.	I know how to be both hygienic and safe when using food. To measure ingredients to the nearest gram accurately. To follow a recipe.	To show that To be both hygienic and safe in the kitchen. To demonstrate a range of baking/ cooking techniques.	I understand the importance of correct storage and handling of ingredients (using knowledge of micro-organisms). To measure accurately and calculate ratios of ingredients to scale up or down from a recipe.